

**2006 Annual Report to the Legislature and
the California Integrated Waste Management Board
Senate Bill 876
Waste and Used Tires**

Purpose

This report was prepared in accordance with Section 20 of Chapter 838, Statutes of 1999 (Senate Bill (SB) 876, Escutia), which amends and adds numerous sections to the Public Resources Code, including Section 42889.3, which states:

On or before January 1 of each year, the Department of Transportation shall report to the Legislature and the board on the use of waste tires in transportation and civil engineering projects during the previous five years, including, but not limited to, the approximate number of tires used every year, and the types and location of these projects.

Background

According to the California Integrated Waste Management Board (Board), California generated 40.2 million waste tires in 2004. Of these tires, roughly 30 million were diverted from landfills through recycling, reusing, retreading, and as tire-derived fuel. For the approximate 10.2 million tires that do not have an established secondary use, the expansion of the existing markets for waste tire usage such as rubberized asphalt concrete, playground mats or other surfacing, civil engineering applications, and tire-derived fuels will assist in addressing potential tire stock pile issues and their associated environmental impacts.

Department's Efforts

The California Department of Transportation (Department) has established a variety of uses for recycled content tire products for civil engineering applications in transportation projects. The Department is committed to helping reduce the number of waste tires entering California's landfills by aggressively pursuing innovative uses for these tires. Although Rubberized Asphalt Concrete (RAC) is viewed by many as the main avenue to aid in this effort, the Department is additionally pursuing other uses that can potentially consume larger quantities of waste tires. "Shredded waste tires," also known as Tire-Derived Aggregate (TDA), consume large quantities of tires when installed as lightweight fill material in the Department's engineering applications.

The Department uses RAC as an alternative to conventional asphalt concrete. RAC incorporates crumb rubber that is generated from waste tires. The

Department has seen a steady increase in RAC usage and attributes this to the continual promotion of RAC usage, the development of the Asphalt Rubber Usage Guide, and to making RAC the strategy of choice when evaluating flexible pavement alternatives for the Department's projects. In 2005, 34.8 percent of all flexible pavement was constructed with RAC. This is an all-time high for the Department. A complete list of the Department's RAC projects is included in Appendix 1. To further enhance the Department's effort to reduce waste tires in this country, the Department is currently revising its project specifications to limit the crumb rubber used in the Department's RAC projects to only that material that is generated in the United States.

Waste Tires Used in Department of Transportation Projects					
Year	Number of Tires Used in RAC Projects ¹	Number of Tires Used as TDF ³	Number of Tires Used as TDA ¹	Number of Tires Used in Other Applications ^{1,5}	Totals
2002	703,953	150,000			853,953
2003	1,126,515	58,000	75,000 ⁴		1,259,515
2004	1,788,945	127,300		100,997	2,017,242
2005	2,387,356	127,300		190,714	2,705,370
2006	2,600,000 ²	127,300	130,000 ⁴	105,339	2,962,639
Subtotal	8,606,769	589,900	205,000	397,050	9,798,719

¹ Based on projects listed in Appendix 1. Formula for conversion of RAC tonnage to number of waste tires consumed is 2.72 tires/RAC metric ton.

² Actual quantity through third quarter is 2,382,883 tires with an estimated amount of 2,600,000 tires projected through the end of the calendar year.

³ Based on the Board's California Waste Tire Generation, Diversion, and Disposal Reports which state that the total number of tires used as Tire Derived Fuel (TDF) in cement kilns in California is as follows: 2002 – 5.0 million tires; 2003 – 5.8 million tires; 2004 – 6.7 million tires; 2005 and 2006 – 6.7 million tires (projected). These values were then multiplied by the Department's 3 percent share of the market in year 2002, 1 percent share of the market in year 2003, 1.9 percent share of the market in years 2004, 2005 and 2006 to determine the number of tires used as TDF.

⁴ This amount represents one project that utilized TDA as lightweight material behind a retaining wall. If this installation continues to perform as anticipated, proving that this is a good engineering use of tires, then this experimental application can be adopted as a standard tool. Additional pilot projects are being aggressively pursued.

⁵ Other applications include 103,886 waste tires used in asphalt rubber-binder material for chip seal projects, and 1,453 waste tires used in rubber mats for weed control.

The Department and the Board, through an inter-agency agreement, conducted research to look for opportunities to broaden the use of RAC in the Department's projects. This research helped to confirm the cost-effectiveness of the Department's strategies for RAC, confirmed the feasibility of recycling reclaimed RAC into newly placed pavement, and established the core elements for product

deployment through statewide training and partnering with industry. This coming year, the Department will use the remaining funds from this agreement to develop on-line training for the use of RAC.

The Department will continue its efforts with California's resource agencies in establishing the appropriate requirements and compliance with regard to air emission standards for RAC plants in those regions that currently prohibit them.

The Department has also worked in partnership with the Board on projects that promote the innovative use of shredded waste tires in highway construction. In 2003, the Department piloted the use of TDA as backfill material behind a retaining wall on State Route (SR) 91 in Riverside County. This retaining wall section was 260 feet in length and utilized approximately 75,000 shredded tires. This pilot allowed the Department to construct a full-scale, fully instrumented test installation of lightweight TDA behind a retaining wall. The Department continues to monitor this installation for reduced retaining wall pressures. Establishing reduced pressures may allow for a significant reduction in the retaining wall mass in future designs, ultimately reducing costs for retaining walls. A similar installation of lightweight backfill using TDA has been designed for another retaining wall in Riverside County near the junction of SR 60, 91, and 215. Construction for this retaining wall has begun with an estimated 130,000 waste tires to be consumed as TDA.

To further promote the use of tire shreds within the Department, a memo was issued in 2005 to all District Directors requiring that TDA be considered as a first option when lightweight fills are required for projects. The Board has provided the Department with access to industry experts in the area of TDA to supplement education to the Department's technical staff on potential applications of TDA.

In addition to RAC and TDA, the use of tires as a fuel supplement in cement kilns and cogeneration facilities constitutes a large market for waste tires. For example, of the estimated 40.2 million waste tires generated in California in 2004, approximately 6.7 million were consumed as Tire Derived Fuel (TDF) in various cement kilns in California. These kilns produce cement used to create the concrete the Department uses in many of its construction projects.

Other transportation applications that incorporate waste tires include rubber mats and asphalt rubber binder material used in chip seals. Asphalt rubber chip seal projects are used to correct surface deficiencies and to seal and protect the pavement against the intrusion of surface water. The Department also installed rubber mats underneath guardrails as a method of vegetation control. This application will continue to be evaluated in an effort to address the Department's

historic maintenance issue of weed control to suppress fire risk, while reducing herbicide usage and the exposure of maintenance staff to traffic.

The Department's early use of RAC was marred by inconsistent performance, which has since been addressed. Periodic reductions in program funding have also restricted the Department's ability to construct all of the necessary improvements for both new highway construction and for the maintenance and rehabilitation of the existing facilities fully utilizing RAC opportunities. The Department's recent focus on using RAC and TDA as strategies of choice show promise in exceeding the Department's internal goals for waste tire usage. Appendix 2 charts the use of the various pavement types constructed by the Department each year by weight. Appendix 3 shows the percent usage of RAC when compared to all flexible pavement strategies.

Summary

The Department continues to help reduce the number of waste tires entering California's landfills. The Department has promoted the use of RAC as a roadway pavement strategy and is continually looking for new and innovative uses of recycled waste tires for transportation projects.

The Department's use of RAC is largely dependent upon the available funding in the State Highway Operational Protection Plan (SHOPP) for pavement projects. With the recent influx of funding, the Department anticipates the construction of additional Highway Maintenance and SHOPP Projects, which should include a significant number of RAC projects.

It should also be noted that there is a substantial investment of State and Federal funds on local roads. Some of these investments are the local share of the State Transportation Improvement Program congestion relief programs, and gas tax revenue. Although the Department cannot accurately quantify the use of RAC on local roads, it is a pavement strategy currently used by many local agencies.

The Department is dedicated to the stewardship of natural resources and will continue to look for opportunities for innovative uses of recycled products in transportation projects.

Appendix 1

CONTRACT DISTIC/CORTEFIN	B.O. DATE	ITEM DESCRIPTION	TONNES	TIRES
1 03-1C8104	03-Pia, Yol, Sac-5,50,51,80-Var	01-May-02 RAC (TYPE O)	2,400	6,528
2 03-2C5704	03-Nev, SIE-80-45/2/51,1,0/02,6	24-Jul-02 RAC (TYPE G)	29,100	79,152
3 03-3546LJ4	03-Sac, Pla-80,51,244-M14,6/28,9,0/01,1,13,7,(09-Apr-02 RAC (TYPE G)	5,795	15,762
4 03-3546LJ4	03-Sac, Pla-80,51,244-M14,6/28,9,0/01,1,13,7,(09-Apr-02 RAC (TYPE O)	16,400	44,808
5 06-455 04	06-Tui-65-35,247,6	26-Feb-02 RAC (TYPE O-HB) (WARRANTY)	12,200	33,184
6 06-474904	06-Fre-168-19,6/28,9,741,0/T52,9	30-Oct-02 RAC (TYPE G)	13,400	36,448
7 06-478204	06-Kar-46-92,4/93,0	22-Oct-02 RAC (TYPE O)	7,720	20,988
8 07-105184	07-Ven-150-24,4/38,6	30-May-02 RAC (WARRANTY)	21,900	59,296
9 07-142204	07-LA-72-0/11,0	13-Jun-02 RAC (TYPE G)	21,600	58,752
10 07-181104	07-LA-91-R22,5/R33,4	01-Aug-02 RAC (TYPE G)	270	734
11 07-189704	07-LA-170-16,2/17,4	10-Jan-02 RAC (TYPE G)	1,830	4,978
12 07-1Y1304	07-LA-118-R12,1/R13,4	07-Nov-02 RAC (TYPE G)	2,140	5,821
13 07-1Y2304	07-LA-110-32,2/35,6	08-Jun-02 RAC (TYPE G)	70	190
14 07-4H4304	07-LA-10S-40,0/41,0	21-Mar-02 RAC (TYPE G)	1,100	2,982
15 09-1A6104	08-Riv-10-R215,7/R231,9	22-Aug-02 RAC (TYPE G)	35,300	98,016
16 08-428164	08-Riv-86/11/195-3,8/27,8,29,6/40,2,0/2/10,6	25-Jul-02 RAC (TYPE G)	41,400	112,608
17 08-334834	08-Riv-80,91-8,9/19,2	01-Nov-02 SHREDDED TIRES RET. WALL		75,000
18 10-0G65504	10-Mar-33, 140-R0,0/R9,0/0,3/18,9	23-Aug-02 RAC (TYPE O)		2,280
19 10-0H7904	10-Ame, Mer-49, 99-23,7/28,3, 0,0/3,9	26-Mar-02 RAC (TYPE O)		6,147
20 12-0C1224	12-Ora-405-18,2/27,4	21-Feb-02 RAC (TYPE G)	5,200	14,144
21 12-0e1104	12-Ora-57-18,1/36,3	21-Feb-02 RAC (TYPE G)	6,920	18,822
22 12-0E5904	12-Ora-90-3,6	21-Nov-02 RAC (TYPE G)	18,500	50,320
23 12-1072U4	12-Ora-133-6,7/13,0	07-Nov-02 RAC (TYPE G)	1	3
			13,400	36,448
			2002 TOTAL	258,806
				778,953
1 02-258504	02-Las-395-19,0/39,9	09-Apr-03 RAC (WARRANTY)	23,616	64,236
2 04-1R9404	04-Ala-81-30,1/31,9	20-May-03 RAC (TYPE G)	2,100	5,712
3 04-2235U4	04-CC-880-25,1/39,1	21-Feb-03 RAC (TYPE G)	31,900	86,768
4 04-29014	04-CC-4-35,4/38,9	14-Nov-03 RAC (TYPE G)	6,730	18,906
5 04-27214	04-Ala-84-28,5/32,8, 36,7/38,0	23-Oct-03 RAC (TYPE G)	5,800	15,776
6 06-305504	06-Fre-33-111,8/133,7	19-Sep-03 RAC (TYPE G)	4,960	13,219
7 06-398104	06-Fre-289-0,0/20,5	03-Oct-03 RAC (TYPE G)	33,200	90,304
8 06-445204	06-Fre-198-5,3/19,8	05-Jun-03 RAC (TYPE O)	6,170	16,782
9 06-492704	06-Mad-41-5,2/11,2	24-Sep-03 RAC (TYPE O)	4,960	13,491
10 07-1257U4	07-LA-57,60-R5,2/R7,3□R36,1/R40,0	08-Apr-03 RAC (TYPE G)	470	1,278
11 07-1Y1204	07-LA-5-60,2/38,7	05-Jun-03 RAC (TYPE G)	5,100	13,872
12 07-1Y0304	07-LA-14-87,4/88,0	29-Jan-03 RAC (TYPE G)	890	2,421
13 07-1Y2204	07-LA-210-R40,6/R74,6	17-Jun-03 RAC (TYPE G)	12,200	33,184
14 07-1Y3304	07-Ven-126-27,7/33,1	27-May-03 RAC (TYPE G)	3,120	8,486

CONTRACT DIST/COR/RT/EP/M	AWARD DATE	ITEM DESCRIPTION	ITEM CODE	PROGRAM	TONNES	TIRES
15 07-1Y 04 04	07-Ven-126-27.7/33.1	RAC (TYPE O)	27-May-03		5,500	14,980
16 08-1AC 04 04	08-SBd-83-R 0/04.4	RAC (TYPE G)	17-Apr-03		5,420	14,742
17 08-36B 04 34	08-SBd-38-16.3/24.0	RAC (TYPE G)	10-Sep-03		13,900	37,908
18 10-0A 04 04	10-Mar-140-43.4/48.6	RAC (WARRANTY)	13-Feb-03		6,804	18,507
19 10-0G 04 04	10-Mar-SJ-59, 99, 120-Var	RAC (TYPE G)	12-May-03		3,590	9,765
20 11-19 04 54	11-Imp-111-R20.9/R35.6	RAC (TYPE G)	19-May-03		13,200	35,904
21 11-230 04	11-SD-75-17.7/28.0	RAC (WARRANTY)	11-Feb-03		364,480	
22 11-232 04 54	11-Imp-88-43.9/44.6	RAC (TYPE G)	06-Feb-03		2,270	6,174
23 11-236 04 54	11-Imp-111-14.2/20.3	RAC (TYPE G)	20-Oct-03		5,370	14,806
24 11-241104	11-Imp-86-31.4/33.2 & 60.0/69.7	RAC (TYPE G)	02-May-03		2,700	7,344
25 11-241 04 54	11-SD-78-R43.1/57.1	RAC (TYPE G)	16-May-03		1,900	5,188
26 11-242 04 04	11-SD-94-R83.7/84.1	RAC (TYPE G)	16-May-03		670	1,822
27 12-09 04 14	12-Ora-405-20.3/40.3	RAC (TYPE G)	26-Sep-03		550	1,496
28 12-0A4 04 04	12-Ora-5-11.9/13.8	RAC (TYPE G)	22-Apr-03		350	952
29 12-0C15U4	12-Ora-5-2.7/11.1	RAC (TYPE G)	05-Aug-03		36,600	99,552
30 12-0C15U4	12-Ora-5-2.7/11.1	RAC (TYPE O)	05-Aug-03		24,400	66,368
31 12-0F 04 104	12-Ora-5-48.8/50.5	RAC (TYPE G)	20-May-03		4,550	12,376
32 12-0F 04 104	12-Ora-39.5/314.2	RAC (TYPE G)	12-Jun-03		11,100	30,192
33 12-0F 04 04	12-Ora-5-10.9	RAC (TYPE G)	22-Jul-03		170	462
				2003 TOTAL	414,160	1,126,315
1 01-316 04 04	01-Men-20-R60.9/69.2	RAC-GAP GRADED (RUMAC-GG)	33307	SHOPP/HA22	1,950	5,304
2 01-316 04	01-Men-20-R60.9/69.2	RAC (TYPE G)	390126	SHOPP/201.12	11,400	31,008
3 01-316 04 04	01-Men-20-R60.9/69.2	RAC (TYPE O)	390127	SHOPP/201.12	3,310	9,003
4 02-0C7 04 04	02-Las-36-4.1.8/R42.8	RAC (TYPE G)	390206	Maint/HM1	2,430	6,610
5 02-0C 04 04	02-Mod-Sha-298-15.3/27.4.11.6/22.9	A-R BINDER	370120	HM1	650	23,824
6 02-38 04 04	02-Sis-5-R25.7/R32.3	RAC (TYPE G)	390206	SHOPP/201.121	24,800	67,456
7 03-4C 04 04	03-Ple-65-R7.8/R14.1	WEED CONTROL (RUBBER MAT)	32193	HB1	1,850	
8 03-3C6 04 04	03-Sac-Yol,Buf-5,50,51,80,98, 191-Var.	RAC (TYPE O)	390127	SHOPP/201.01	1,150	3,128
9 03-0C 04 04	03-Sac-5-27.7/28.8	RAC (TYPE O)	390127	SHOPP/201.121	2,440	6,637
10 03-0A 04 04	03-Pta-80-23.0/53.6	RAC (TYPE O)	390207	SHOPP/201.12	44,500	121,040
11 03-1A 04 04	03-Yol-80-10.3/R8.2	RAC (TYPE O)	390207	SHOPP/HA22	4,910	13,355
12 04-0C7 04 04	04-SCI-880-0.0/16.0	RAC (TYPE G)	390206	SHOPP/201.121	49,300	134,096
13 04-0C 04 04	04-SCI-101-0.0/R28.3	RAC (TYPE G)	390206	SHOPP/201.121	27,100	73,712
14 04-0C7 04 04	04-CC-4-1.5/y49.9	RAC (TYPE G)	390206	SHOPP/HA22	9,100	24,752
15 04-0CT 04 04	04-SCI-280-R0.0/R4.4	RAC (TYPE G)	390206	SHOPP/HA22	24,000	65,280
16 04-2332U4	04-SCI-Alb-880,262-13.2/16.9,R0.0/4.7,R0.0/R0	RAC (TYPE G)	390206	STIP/SHOPP/HE13	13,020	35,414
17 04-270 04 04	04-CC-123-0.0/3.5	RAC (TYPE G)	390206	SHOPP/HA22	7,800	21,216
18 05-0J5 04 04	05-SLO-41-66.2/70.5	A-R BINDER	370120	HM1A	120	4,400

CONTACT	DIS/T/COR/TPM	AWARD DATE	ITEM DESCRIPTION	TONNES	PROGRAM	CODE	TIRES
19 05-05504	05-SB-01-R1.0/R2.7 R4.0/31.0	19-May-04	A-R BINDER	1050	38.500		
20 06-40804	08-Ker-58-123.9/133.0	08-Mar-04	A-R BINDER	420	15.400		
21 06-40804	06-Fr8-5/78.2/105.9	12-Apr-04	RAC (TYPE G)	390126	SHOPP/201.121	HM1	286.416
22 06-41304	06-Fr8-33-67.8/87.4	23-Apr-04	RAC (TYPE G)	390126	Maint/HM1A		25.214
23 06-40804	08-Ker-119-24.5/29.3	28-Apr-04	RAC (TYPE G)	390296	Minor A/201.12	7.240	19.893
24 06-41904	06-Fr8-168-65.0/75.0	13-May-04	RAC (TYPE G)	390126	Minor A/201.12	6.690	18.197
25 06-40804	06-Tu1-99-84.8/86.8	13-May-04	RAC (TYPE G)	390296	Minor A/201.12	5.370	14.806
26 06-47704	08-Ker,Kin-5-132.4/140.1,0/07.1	18-May-04	RAC (TYPE O)	390127	Maint/HM1A	7.500	20.400
27 06-40704	08-Ker-58-KP R207.6/R223.6	19-May-04	RAC (TYPE G)	390126	Minor A/201.120	7.380	20.019
28 06-40904	08-Med-41-40/244.9	19-May-04	RAC (TYPE G)	390296	Maint/HM1	2.880	7.779
29 06-40904	08-Ker-155-R97.8/R114.2	25-May-04	A-R BINDER	370120	HM1A	300	11.000
30 06-40704	08-Ker-186-33.9/36.4	28-May-04	RAC (TYPE G)	390296	Minor A/201.12	3.270	8.894
31 07-40604	07-LA-1-40.9/41.2	04-May-04	RAC (TYPE G)	390126	Minor A/201.12	210	571
32 07-226204	07-LA-5-0/018.5	09-Jun-04	RAC (TYPE G)	390296	SHOPP/201.121		85.136
33 07-11104	07-LA-SBd-71.80-1.9/2.2. 0.0	10-Jun-04	RAC (TYPE G)	390296	Maint/HM1A	2.490	6.773
34 07-21404	07-LA-10.10S-28.5/34.6 S0.50.6	17-Jun-04	RAC (TYPE G)	390296	SHOPP/201.121	11.040	30.029
35 07-1Y1004	07-LA-57.210-R1.8/R10.4. R74.5/R76.5	23-Jun-04	RAC (TYPE G)	390296	Maint/HM1A	3.190	8.677
36 07-1Y304	07-LA-110-25.7/33.3	24-Jun-04	RAC (TYPE G)	390126	Maint/HM1A	3.080	8.323
37 07-1Y604	07-LA-5-24.7/28.6	24-Jun-04	RAC (TYPE G)	390126	Maint/HM1B	650	1.768
38 07-1Y904	07-LA-47-40.0/1.2	29-Jun-04	RAC (TYPE G)	390126	Maint/HM1A	1.600	4.352
39 07-194504	07-Ven-1-0.0/15.1	01-Dec-04	RAC (TYPE G)	390296	SHOPP/121	29.000	78.880
40 07-20704	07-LA-66-0.0/4.1	15-Oct-04	RAC (TYPE G)	390296	SHOPP/121	450	1.224
41 07-21304	07-LA-2-23.0/37.6	29-Oct-04	RAC (TYPE G)	390126	SHOPP/121	2.680	7.235
42 08-0E104	08-SBd-62-50/2/52.8	05-May-04	RAC (TYPE O)	390127	Maint/HM1A	3.800	10.336
43 08-1A004	08-SBd-18-141.3/155.1	11-May-04	RAC (TYPE O)	390127	Maint/HM1A	17.300	47.056
44 08-0E004	08-SBd-2-6.4/10.3	19-May-04	A-R BINDER	370120	HM1A	184	6.013
45 08-47804	08-Rv-2/15-44. /61.3	25-May-04	RAC (TYPE G)	390126	SHOPP/201.121	75.300	204.816
46 08-0A104	08-SBd-10-R0.0/R14.8	23-Jun-04	RAC (TYPE G)	390126	SHOPP/201.121	1.600	4.352
47 08-0E304	08-Rv-371-86.2/111.0	21-Oct-04	RAC (TYPE O)	390207	Maint/HM1A	7.930	21.570
48 10-0J004	10-SJ-99-36.9/46.0	23-Apr-04	RAC (TYPE O)	390207	Maint/HM1A	9.580	26.058
49 10-42804	10-Mpa-140-24.9/30.4.	01-Jun-04	RAC (TYPE G)	390296	SHOPP/201.12	6.040	16.429
50 10-0A724	10-SJ-5-39.4. 41.1	05-Oct-04	RAC (TYPE G)	390296	SHOPP/HA22	2.580	7.045
51 10-1A104	10-Ama-16.0.0/15.1	16-Nov-04	RAC (TYPE G)	390126	SHOPP/HA22	15.000	40.800
52 11-228804	11-SD-5-R23.3/R24.6	29-Jun-04	RAC (TYPE G)	390126	SHOPP/201.121	3.520	9.574
53 11-07704	11-SD-15-M21.0/R82.0	23-Sep-04	RAC (TYPE G)	390296	SHOPP/201.121	22.800	61.472
54 11-20714	11-SD-5.163-R25.7/R26.7. 1.0/6.4	15-Nov-04	RAC (TYPE G)	390296	SHOPP/HA22	9.080	24.725
55 11-241184	11-SD-67-R6.3/29.8	28-Dec-04	RAC (TYPE O)	390207	Maint/HM1A	15.100	41.072
56 12-0F604	12-Ora-57.90-31.6/32.0.8.3/8.5	02-Jan-04	RAC (TYPE G)	390126	SHOPP/201.01	530	1.442
					2004 TOTAL	690,404	1,889,942

CONTACT	ACT DIST/COR/TEPM	AWARD DATE	ITEM DESCRIPTION	ITEM CODE	PROGRAM	TONNES	TIRES
1 01-452 514	01-Hum-36-0.5/21.6	01-Feb-05	A-R BINDER	370120	SHOPP/20.80.010	500	18,335
2 01-457 514	01-Man-128-16.6/28.8	12-May-05	A-R BINDER	370120	SHOPP/20.80.010	270	9,901
3 02-0-C 514	02-Sha-298-38.8/48.8	21-Oct-05	RAC (TYPE O)	390207	SHOPP/201.120	8,480	23,011
4 02-1-C 514	02-Las-139-0.0/1.0	27-May-05	RAC (TYPE G)	390206	SHOPP/20.80.010.010	1,510	4,107
5 02-1-C 514	02-Las-395-214.0/223.7	09-Mar-05	A-R BINDER	370120	SHOPP/20.80.010	240	8,801
6 02-36 514	02-Med-289.395-62.2.17.7/38.3	01-Nov-05	RAC (TYPE G)	390206	HA22.HB4N	6,100	16,592
7 02-38 714	02-Med-385-37.5/88.1	07-Sep-05	RAC (TYPE G)	390195	SHOPP/201.121	51,600	140,352
8 03-2M 514	03-Sac-5.99-47.8/49.0, R51.7/59.3	11-May-05	RAC (TYPE O)	390207	SHOPP/20.80.010	14,800	40,256
9 04-0-C 514	04-Als-24-R2.8/R10.0	10-May-05	RAC (TYPE G)	390208	SHOPP/201.010	1,800	4,896
10 04-0-C 514	04-Als-24-R2.8/R10.0	10-May-05	RAC (TYPE O)	390207	SHOPP/201.010	8,370	22,786
11 04-0-C 514	04-Sci-152-35.3/48.9	07-Sep-05	RAC (TYPE G)	390206	SHOPP/201.122	39,700	107,984
12 04-0-C 514	04-Sci-101-64.7/84.6	19-Oct-05	RAC (TYPE G)	390123	SHOPP/201.120	45,500	123,760
13 04-12 514	04-Nap-29-47.1/52.8	23-Dec-05	RAC (TYPE G)	390126	SHOPP/201.120	9,200	25,024
14 04-12 514	04-Nap-29-47.1/52.8	23-Dec-05	A-R BINDER	370120	SHOPP/20.80.010	240	8,801
15 05-0-A 5104	05-SB,SLO-33-0.0/13.2, 0.0/8.0	23-Feb-05	RAC (TYPE G)	390126	SHOPP/201.120	29,100	79,152
16 05-0-A 5104	05-SB,SLO-33-0.0/13.2, 0.0/8.0	01-Jun-05	RAC (TYPE O-HB)	390127	SHOPP/201.120	10,200	27,744
17 08-0-C 5104	08-Kin-5.0/0.18.1	01-Apr-05	RAC (TYPE O)	341598	SHOPP/20.80.010.010	12,200	33,184
18 08-0-C 5104	08-Ker-223-34.1/51.4	28-Mar-05	RAC (TYPE G)	390127	SHOPP/20.80.010.010	8,080	21,978
19 08-0-C 5104	08-Ker-58-R207.6/R219.5, R223.7/R231.4	04-Nov-05	RAC (TYPE G)	390206	SHOPP/20.80.010.010	11,200	30,464
20 08-0-C 5104	08-Ker-43.166.184.223-VAR	15-Nov-05	RAC (TYPE G)	390206	SHOPP/20.80.010.010	21,100	57,392
21 08-0-C 5104	08-Tu,Fri-33, 198, 201-Var	04-Mar-05	RAC (TYPE G)	390206	SHOPP/201.121	18,700	50,884
22 08-33 5104	08-Tu-198-34.8/42.9	19-May-05	RAC (TYPE G)	390206	SHOPP/20.80.010.010	16,000	43,520
23 08-43 5104	08-Tu-63-31.9/R 48.4	04-Nov-05	RAC (TYPE G)	390206	SHOPP/201.121	17,500	47,600
24 08-43 5104	08-Tu-83-31.9/R 48.4	23-May-05	RAC (TYPE G)	390126	SHOPP/201.121	3,190	8,677
25 08-48 5104	08-Ker-58-219.5/23.1.4	14-Feb-05	RAC (TYPE G)	390126	SHOPP/20.80.010.010	5,910	16,075
26 08-49 5104	08-Tu-99, 201-97.8/75.6, 27.4/33.5	14-Feb-05	RAC (TYPE G)	390126	SHOPP/20.80.010.010	3,410	9,275
27 08-49 5104	08-Tu-99, 201-97.8/75.6, 27.4/33.5	14-Feb-05	RAC (TYPE G)	390127	SHOPP/20.80.010.010	3,700	10,064
28 07-18 5104	07-LA-91-R8.7/R22.7	03-Nov-05	RAC (TYPE G)	390206	SHOPP/201.120	13,500	36,720
29 07-1Y 5104	07-LA-5.0/0/8.5	24-Mar-05	RAC (TYPE G)	390126	SHOPP/20.80.010.010	4,490	12,213
30 07-1Y 5104	07-Ven-33-33.4/41.5, 47.7/62.8	14-Apr-05	RAC (TYPE G)	390206	SHOPP/20.80.010.010	11,800	32,096
31 07-1Y 5104	07-Ven-150.52.5/54.6	25-Mar-05	RAC (TYPE G)	390126	SHOPP/20.80.010.010	2,400	6,528
32 07-1Y 5104	07-LA-10-62.6/68.2	22-Apr-05	RAC (TYPE G)	380206	SHOPP/20.80.010.010	2,230	6,088
33 07-1Y 5104	07-LA-405-0.7/12.6	27-Apr-05	RAC (TYPE G)	390206	SHOPP/20.80.010.010	8,700	23,684
34 07-1Y 5104	07-LA-438-40.3/48.3	28-Mar-05	RAC (TYPE G)	390126	SHOPP/201.121	4,950	13,464
35 07-20 5104	07-LA-405-62.3/63.2	02-Mar-05	RAC (TYPE G)	390206	STIP	400	1,088
36 07-20 5104	07-LA-80-R11.0/31.3	03-Jun-05	RAC (TYPE G)	390206	SHOPP/201.121	2,290	6,229
37 07-20 5104	07-LA-27-0.0/17.8	22-Sep-05	RAC (TYPE G)	390206	SHOPP/20.80.010	19,200	52,224
38 07-21 5104	07-Ven-118-0.8/17.2	25-Mar-05	RAC (TYPE G)	390206	SHOPP/201.121	21,400	58,208
39 07-21 5104	07-Ven-118-18.1/25.8	30-Mar-05	RAC (TYPE G)	390206	SHOPP/201.121	11,600	31,552
40 07-24 5104	07-LA-170-23.5/33.1	13-Oct-05	RAC (TYPE G)	390126	SHOPP/201.120	4,150	11,288
41 07-24 5104	07-LA-10-3.4/22.7	13-Oct-05	RAC (TYPE G)	390206	SHOPP/201.120	22,000	59,840

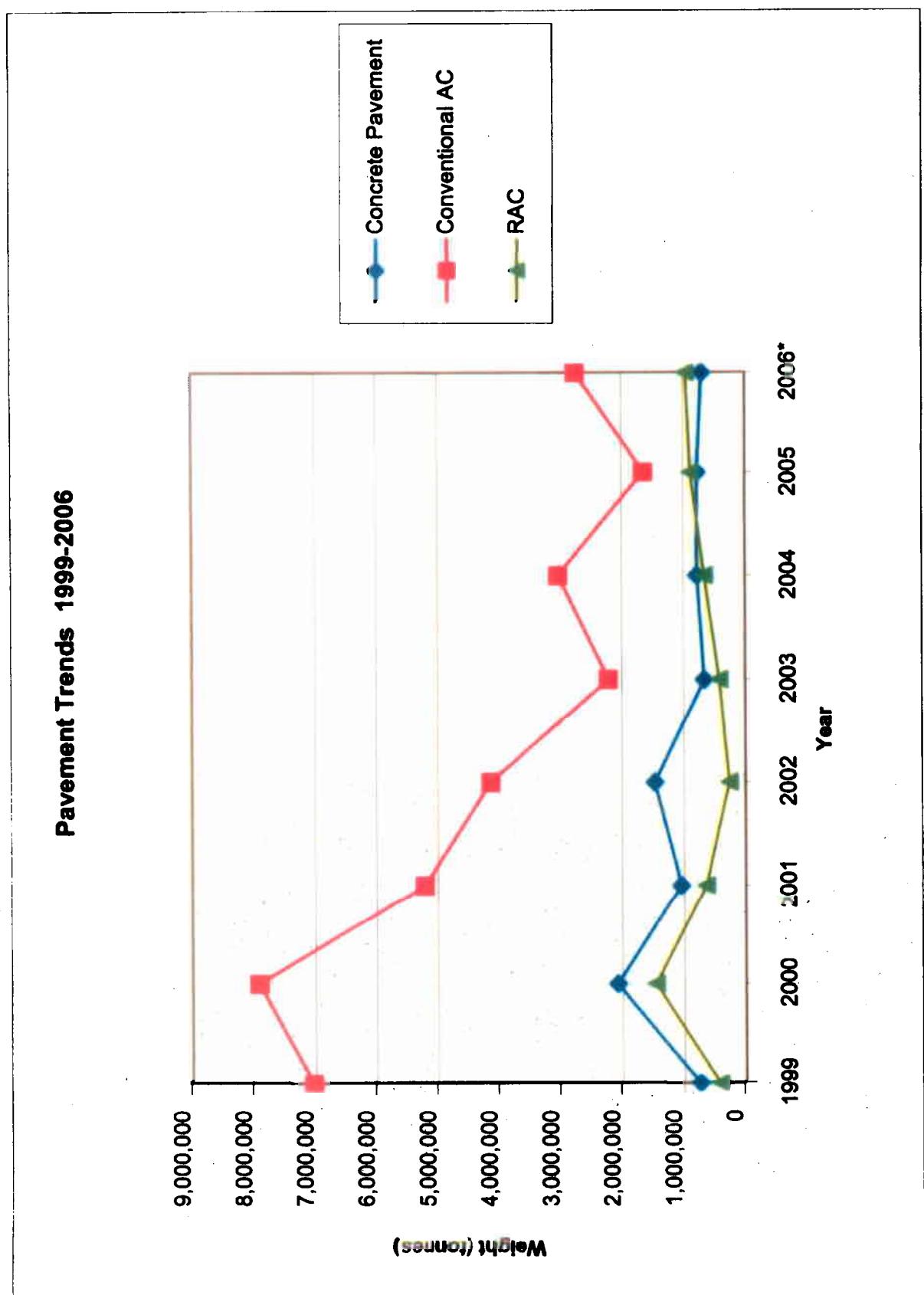
CONTACT ACT	DIS/T/COR/TEMP	AWARD DATE	ITEM DESCRIPTION	ITEM CODE	PROGRAM	TONNES	TIRES
42 07-24- 10 04	07-LA-101-12.0/19.2	03-Jun-05	RAC (TYPE G)	390206	SHOPP/201.121	32,300	87,856
43 07-24- 10 04	07-Van-128-0.0/21.9	21-Sep-05	RAC (TYPE G)	390126	SHOPP/201.121	3,910	10,635
44 07-2Y- 10 04	07-LA-71-R1.4/2.6	12-May-05	RAC (TYPE G)	390206	SHOPP/20.80.010.010	2,760	7,507
45 08-0E- 03 04	08-Riv-79-0.0/3.7	27-Apr-05	RAC (TYPE O)	390207	SHOPP/20.80.010.010	2,160	5,875
46 08-0E- 03 04	08-SBd-18-T10.1/R18	23-Mar-05	RAC (TYPE O)	390207	SHOPP/20.80.010.010	11,000	29,920
47 08-0E- 03 04	08-Riv-60-35.4/41.8	23-Mar-05	RAC (TYPE G)	390128	SHOPP/20.80.010.010	6,930	18,850
48 08-0E- 03 04	08-SBd-247-var.	30-Jun-05	RAC (TYPE G)	390128	SHOPP/201.130	45,500	123,760
49 08-0F- 20 04	08-SBd-95-115.8/129.5	25-Apr-05	RAC (TYPE G)	390128	SHOPP/20.80.010.010	7,910	21,515
50 08-0F- 41 04	08-SBd-18-156.9/162.5	15-Jun-05	RAC (TYPE O)	390207	SHOPP/20.80.010.010	5,890	16,021
51 08-0F- 41 04	08-Riv-79-R14.5/R24.1 (KP)	21-Apr-05	A-R BINDER	370120	SHOPP/20.80.010.010	200	7,334
52 08-0F- 41 04	08-Riv-111-T85.3/R90.4	28-Apr-05	RAC (TYPE O)	390207	SHOPP/20.80.010.010	6,900	18,768
53 08-0F- 41 04	08-Riv-15.60-63.1/83.6, 0.0/1.3	25-Apr-05	RAC (TYPE G)	390126	SHOPP/20.80.010.010	800	2,176
54 08-1A- 10 04	08-SBd-247.0/8/13.2	08-Apr-05	A-R BINDER	370120	SHOPP/20.80.010.010	480	17,802
55 08-35E- 14 4	08-SBd-38-R8.2/14.7	07-Sep-05	RAC (TYPE G)	390126	SHOPP/201.122	7,460	20,281
56 09-29- 50 04	09-Imy-395-0.0/R13.8	10-Aug-05	RAC (TYPE G)	390206	SHOPP/201.120	49,700	135,184
57 09-30- 10 04	09-Mino-395-58.1/72.5, 135.7/149.7	30-Aug-05	RAC (TYPE G)	390126	SHOPP/201.122	25,500	69,380
58 09-31- 10 04	09-Mino-395-149.6/193.9	07-Oct-05	RAC (TYPE G)	390206	SHOPP/201.120	36,500	99,280
59 09-32- 10 04	09-Mino-395-20.3/58.1	13-Jan-05	A-R BINDER	370120	SHOPP/20.80.010.010	930	34,103
60 09-32- 10 04	09-Kar-14.395-74.3/81.7, 11.2/19.3	25-May-05	RAC (TYPE O)	390127	SHOPP/20.80.010.010	8,230	22,386
61 09-33- 10 04	09-Mino-395-71.6/81.4, 93.5/12.5	03-Jun-05	A-R BINDER	370120	SHOPP/20.80.010.010	1,250	45,838
62 10-0- 19 704	10-Mer-185-49.2/58.6	06-May-05	RAC (TYPE O)	390127	SHOPP/20.80.010	2,010	5,457
63 10-0- 17 704	10-SJ-5-0.5/R22.3	10-May-05	RAC (TYPE O)	390207	SHOPP/20.80.010	8,250	22,440
64 10-0- 17 04	10-SJ-4-32.3/40.2	10-May-05	RAC (TYPE O)	390127	SHOPP/20.80.010.010	4,640	12,621
65 10-3A- 01 04	10-Mer-Mad-152-36.7/R85.7, R0.0/R0.4	14-Jul-05	RAC (TYPE G)	390126	SHOPP/201.121	6,450	17,544
66 11-2- 15 504	11-Imp-86-89.7/109.1	31-Aug-05	RAC (TYPE G)	390206	SHOPP/201.120	98,500	267,920
67 11-2- 15 04	11-SD-54-T19.8/R72.9	05-Jul-05	RAC (TYPE G)	390206	SHOPP/201.122	8,090	22,005
68 12-0- 21 24	12-Ora-405-26.5/R28.6	25-Oct-05	RAC (TYPE G)	390126	SHOPP/20.80.010.020	990	2,893
69 12-0F- 11 04	12-Ora-55-14.7/16.5	30-Nov-05	RAC (TYPE G)	390206	SHOPP/20.80.010.020	1,390	3,754
70 12-0G- 10 04	12-Ora-1-31.8/38.2	20-May-05	RAC (TYPE G)	390126	SHOPP/20.80.010.010	14,000	38,080
71 12-0G- 10 14	12-Ora-133-13.5/16.3	07-Mar-05	RAC (TYPE G)	390206	SHOPP/20.80.010	3,350	9,112
72 12-0G- 10 04	12-Ora-405-26.1	17-Nov-05	RAC (TYPE G)	390126	SHOPP/20.80.010.020	80	218
73 12-0G- 10 04	12-Ora-1-32.8	23-Sep-05	RAC (TYPE G)	390126	SHOPP/20.80.010	74	201
					2005 TOTAL	881,814	2,539,069
1 01-46- 21 04	Hum-96-0.0/8.0	10-Apr-06	ASPHALT-RUBBER BINDER	370120	20.80.010.010	320	11,734
2 01-2- 27 04	01-Man-20-53.9/R61.0	05-Jun-06	RAC (TYPE G)	390126	201.12	13,100	35,632
3 01-2- 27 04	01-Man-20-53.9/R61.0	05-Jun-06	RAC (TYPE O)	390127	201.12	4,210	11,451
4 02-1C- 10 04	02-Mod-139.299-Var	28-Feb-06	RAC (TYPE G)	390126	HM1	4,480	12,186
5 02-1C- 10 04	02-Plu-36-R22.5/29.6	07-Jun-06	RAC (TYPE G)	390126	20.80.010.010	4,850	13,192
6 02-1C- 10 04	Plu-36-R22.5/29.6	07-Jun-06	ASPHALT-RUBBER BINDER	370120	20.80.010.010	33	1,210
7 02-3- 18 7304	02-Sha,Sis-5-93.3/107.8,0.0/4.3	20-Jun-06	RAC (TYPE G)	390126	HA22	61,200	166,464

CONTACT	DIS/T/CO/TE/PM	AWARD DATE	ITEM DESCRIPTION	ITEM CODE	PROGRAM	TONNES	TIRES
8 03-2M ³ 04	03-BuT-32-0.1/12.4	11-May-06	RAC (TYPE O)	390127	20.80.010.010	5,600	15,232
9 03-2M1004	03-Yub-20-85-3/2/10.9,0.0/44.7	23-May-06	RAC (TYPE G)	390128	20.80.010.010	9,790	26,629
10 03-4A5 04	03-Yub-70-30-4/32.1	30-Jun-06	RAC (TYPE G)	390129	201.01	3,320	9,030
11 03-1A5 04	03-Yub,NeV-20-34.6/34.9,0.0/R6.6	19-Sep-06	RAC (TYPE O)	390127	HB1/201.01	4,770	12,974
12 04-2B104	04-CC-80-15.8/20.8	19-Jan-06	RAC (TYPE G)	390126	HB4C	1,310	3,563
13 04-0CB04	04-Son-37-3-26.6	05-Apr-06	RAC (TYPE G)	390126	201.121	10,200	27,744
14 04-0CB04	04-Als-880-R19.9/R28.9	08-May-06	RAC (TYPE G)	390206	201.121	14,300	38,896
15 04-0CB04	04-Als-880-R19.9/R28.9	08-May-06	RAC (TYPE O)	390207	201.121	9,930	27,010
16 04-27214	04-SCL-280-R3.5/8.2	24-May-06	RAC (TYPE G)	390126	201.12	12,600	34,272
17 04-0E804	04-Mm-101-R37.0/44.4	08-Jun-06	RAC (TYPE G)	390126	HM1	11,800	32,096
18 04-263044	04-Als-238.580,980-R23.2/R26.8,48.5/R49.6	17-Aug-06	RAC (TYPE G)	390126	HE13/201.12	12,000	32,840
19 04-243044	04-Als-238.580,980-R23.2/R26.8,48.5/R49.6,R	31-Aug-06	RAC (TYPE O)	390127	HE13/201.121	9,050	24,616
20 04-272124	04-CC-4-50.0/R85.6	06-Sep-06	RAC (TYPE G)	390126	HA22/20.80.201.121	28,700	78,064
21 04-4C2904	04-Nap-29-11.9/18.2	29-Sep-06	RAC (TYPE G)	390126	HA22/201.121	15,500	42,160
22 04-0CB04	04-SM-101-0.0/10.9	10-Jul-06	RAC (TYPE O)	390127	HE13/600/75.6	480	1,306
23 05-345304	05-SLO-41-17.5/19.6	25-Sep-06	RAC (TYPE O)	390127	HA22/201.122	12,000	32,640
24 05-0L104	05-SLO-41-0.1/16.9	05-Jan-06	RAC (TYPE G)	390206	HM1A 20.80.010.010	20,800	58,576
25 03-42304	06-Ker-178-12.1/21.9	06-Apr-06	RAC (TYPE G)	390206	HA22 20.10.201.121	39,000	106,080
26 03-364304	06-Kin-41-45.7/53.1	23-Jun-06	RAC (TYPE G)	390126	12,900	35,088	
27 06-463 04	06-Ker-58-107.8/124.3	10-Aug-06	RAC (TYPE O)	390127	HM1A 20.80.010.010	44,800	121,856
28 06-0E2104	06-Fre-99-32.5/44.0	25-Sep-06	RAC (TYPE G)	390126	HM1A/10.01	15,200	41,344
29 09-0F1304	06-Kin,Ker-33,188-20.1/27.5,8.0/14.5	27-Mar-06	RAC (TYPE G)	390126	0	4,800	13,056
30 07-224 04	07-LA-170-R30.2/R31.9	25-Apr-06	RAC (TYPE G)	390126	380	979	
31 07-1YY704	07-Ven-23-5.8/16.7	28-Apr-06	RAC (TYPE G)	390126	7,300	19,856	
32 07-2Y0 04	07-LA-710-R34.8/R43.3	04-May-06	RAC (TYPE G)	390126	HM1A	3,850	10,472
33 07-1YY404	07-Ven-34-10.1/20.0	08-May-06	RAC (TYPE G)	390126	HM1A	6,860	18,659
34 07-1Y8 04	07-LA-118-R15.9/R21.4	26-May-06	RAC (TYPE G)	390126	HM1A	2,200	5,984
35 07-2Y304	07-LA-110-405-17.9/20.9,24.6/33.1	30-May-06	RAC (TYPE G)	390126	HM1A	4,310	11,723
36 07-1Y1504	07-LA-110-48.8/51.3	24-May-06	RAC (TYPE G)	390126	HM1A	2,900	7,888
37 07-1Y5304	07-LA-1-10.9/14.9	22-Jun-06	RAC (TYPE G)	390126	HM1A	4,810	13,083
38 07-2Y3 04	07-Ven-118-25.8/R28.8	22-Jun-06	RAC (TYPE G)	390126	HM1A	6,100	16,582
39 07-1Y5304	07-LA-164-6.5/8.9	23-Jun-06	RAC (TYPE G)	390126	HM1A	3,580	9,765
40 07-1Y3204	07-LA-138-8.1/16.1	21-Jul-06	RAC (TYPE G)	390126	HM1A	4,800	13,056
41 07-1F1504	08-LA-5-137.8/139.2	12-Sep-06	RAC (TYPE G)	390206	HB1/20.20.201.010	60	163
42 07-214204	07-LA-2-39.3/132.4	27-Mar-06	RAC (TYPE G)	390126	120	1,400	3,908
43 07-2Y3 04	07-Ven-33-18.0/33.4	28-Mar-06	RAC (TYPE G)	390126	121	111,000	301,920
44 07-184104	07-LA-23-0.0/14.3			390126	HM1A	9,070	24,670
45 07-4L7504	07-Ven-126-47.2/52.7			390126	HM1A	14,700	39,984
46 08-358 24	08-SBd-38-R15.0/R15.5			390126	114	60	163
47 08-481004	08-Riv-95-17.7/40.2			390126	121	700	1,904
48 08-0F8104	08-Riv-79-R54.4/R85.0			390126	HM1A	12,100	32,912
49 08-0F8104	08-Riv-74-44.3/49.1			390126	HM1A	9,410	25,585
				390126	HM1A	8,110	22,059

CONTACT	DISTRIC	CORTERPM	AWARD DATE	ITEM DESCRIPTION	ITEM CODE	PROGRAM	TONNES	TIRES
50 08-0F ⁰⁴	08-SBd-395-74/83.7	25-Apr-06	RAC (TYPE O)	390207	HM1A		8,920	24,262
51 08-0F ⁰⁴	08-SBd-247-38.6/52.0	04-May-06	RAC (TYPE G)	390126	HM1A		7,380	20,074
52 08-0F ⁰⁴	08-Rv-95-45.0/58.3	15-May-06	RAC (TYPE G)	390126	HM1A		7,780	21,162
53 08-0F ⁰⁴	08-SBd-2-0.0/6.8	17-May-06	RAC (TYPE G)	390126	HM1 A		6,180	16,810
54 08-0C ⁵¹ 04	08-Rv-95-0.0/10.5	25-May-06	RAC (TYPE G)	390126	HM1A		8,600	23,392
55 08-0F ⁰⁴	08-Rv-74-148.5/154.5	15-Jun-06	RAC (TYPE G)	390126	HM1A		10,300	28,016
56 08-0G ⁶⁸ 04	08-SBd-395-R6.8/114.14/118.8	19-Sep-06	RAC (TYPE O)	390127	HA22/20.20.201.122		8,420	22,902
57 09-319704	09-Imy-395-50.1/68.6	01-Mar-06	RAC (TYPE G)	390126	10		16,500	44,880
58 09-301404	09-Imy-395-41.1/50.2.2.68/73.4	25-Apr-06	RAC (TYPE G)	390126	12.1		16,500	44,880
59 09-331504	Mno-395-9.8/20.3.83.7789.5	09-May-06	ASPHALT-RUBBER BINDER	370120	HM1A		850	23,838
60 09-301404	09-Imy-395-184.9/ ⁶⁸ 9.R1/98.3/R208.3	12-Sep-06	RAC (TYPE G)	390126	HA22/20.10.201.121		19,230	52,306
61 10-0M ⁶⁷ 04	SJ.Sia-12.26.132-Var	24-Feb-06	ASPHALT-RUBBER BINDER	370120	20.80.01.010		1,290	47,304
62 10-301164	10-SJ-5.205-R20/R22.0,R3.8/R21.6	28-Mar-06	RAC (TYPE G)	390206	HB4C		32,000	87,040
63 10-QM ¹⁴ 04	10-Tuo-120-11.9/18.2.R57.1/R61.5	19-Apr-06	RAC (TYPE O)	390127	20.80.01.010		6,880	18,714
64 10-QM ¹⁵ 04	10-Mer-152.165-Var	04-May-06	RAC (TYPE G)	390126	20.80.01.010		4,100	11,152
65 10-QM ²⁰ 04	10-SJ-12.29.6/33.5	09-May-06	RAC (TYPE O)	390127	20.80.01.010		4,310	11,723
66 10-QM ³⁰ 04	10-Mer-99-28.4/38.3	12-May-06	RAC (TYPE O)	390127	20.80.01.010		5,500	14,980
67 10-QM ⁴¹ 04	10-Tuo-108-73.2/R80.9	22-May-06	RAC (TYPE G)	390126	20.80.01.010		4,680	12,675
68 10-0P ²⁰ 04	10-Mer-99-8.0/33.6	11-Sep-06	RAC (TYPE G)	390126	HA22/20.20.201.121		15,400	41,888
69 10-0N ²¹ 04	10-Sia,SJ-5.0/045.2.0.0/0.5	20-Sep-06	RAC (TYPE G)	390126	20.80.01.012		48,100	130,832
70 11-235704	11-SD-805-17.4/19.0	06-Apr-06	RAC (TYPE G)	390126	120		3,300	8,976
71 11-28104	SD-79-16.1/32.5	30-May-06	ASPHALT-RUBBER BINDER	370120	HM1A		370	13,568
72 12-0H ⁰¹ 04	12-Ora-55.91-17.3/28.5.11.1/11.9	22-Jun-06	RAC (TYPE G)	390126	HM1A		6,980	18,986
73 12-0G ⁷³ 04	12-Ora-91-27.2/28.0	23-Jun-06	RAC (TYPE G)	390126	10		1,970	5,358
74 12-0F ⁰⁴ 04	12-Ora-5-36.8/R39.9	01-Aug-06	RAC (TYPE G)	390126	HB1/201.01		19,500	53,040
75 12-0F ¹⁸ 04	12-Ora-241-28.3/40.2	12-Sep-06	RAC (TYPE O)	390127	HA22/20.20.201.122		12,500	34,000
76 12-0C ⁵⁵ 04	12-Ora-133-0.0/0.5	25-Sep-06	RAC (TYPE G)	390206	201.12		730	1,986
77 12-0C ⁵⁰ 04	12-Ora-133-0.0/0.5	25-Sep-06	ASPHALT-RUBBER BINDER	370120	201.12		20	733
78 12-0C ⁵³ 04	12-Ora-133-0.0/0.5	25-Sep-06	RUBBERIZED SEAL COAT	375024	201.12		150	5,501

Through 3rd Quarter 2006 TOTAL 878,893 2,498,789

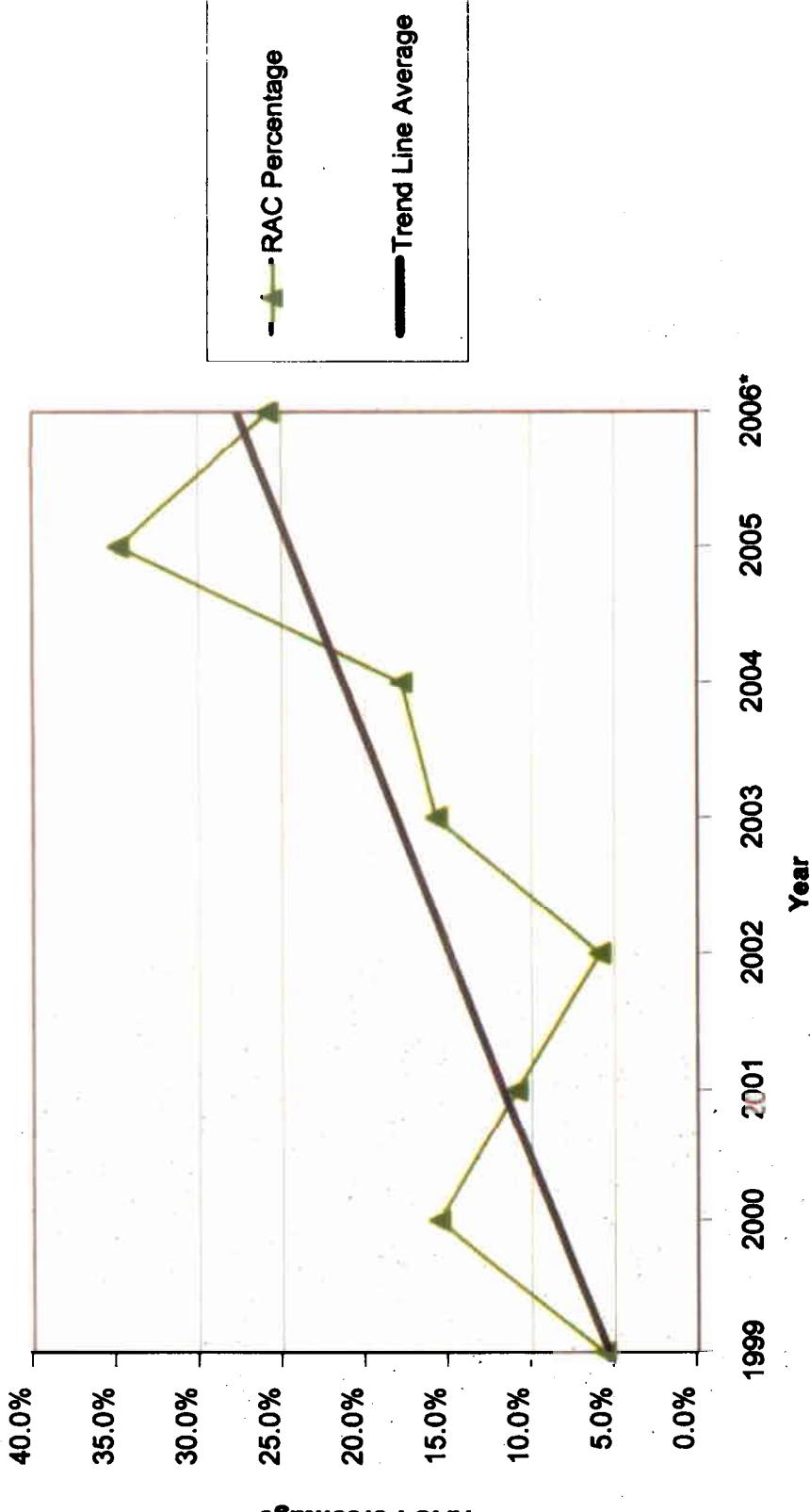
Appendix 2



Appendix 3

RAC as Percentage of Total Flexible Pavement

1999-2006



RAC percentage determined by comparing RAC to all flexible pavements, by weight.

*Projected through end of the year, based on actual amounts through third quarter.